



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/382,763	08/25/1999	GEORGE E. DEROME	ADIC-1	5650

7590 12/04/2001

SREPHEN G MATZUK  
PO BOX 767  
BOSTON, MA 02102

EXAMINER

CHOW, CHARLES CHIANG

ART UNIT PAPER NUMBER

2684

DATE MAILED: 12/04/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/382,763

Applicant(s)  
Derome et al.

Examiner  
Charles Chow

Art Unit  
2684



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Aug 25, 1999
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2 20) ☐ Other:

**Detailed Action**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Maxwell (US 5,635,921).

Maxwell et al. discloses **claim 1**, a transmitter, comprising: a multi-signal generator for providing a plurality of signals within a selected frequency band and having a center frequency and relative frequency spacing, said center frequency is selectively adjusted to cover at least a portion of the selected frequency, see in title, abstract, front figure, Fig. 3, 4, 6, for the emergency vehicle transmission system, having preselected various radio frequencies and bands, including police, emergency frequencies; the step 304 for determining the particular frequencies; the DDS 112 adjusting of the center frequency. In col. 8, line 51-57, col. 10, line 17-19 for the relative spacing frequencies for the AM, FM signals.

Maxwell discloses a modulator connected to said multi-signal generator for selectively and simultaneously modulating said plurality of signals, see in Fig. 3, the AM modulator 150, the FM modulator 104 for the simultaneously modulating of the AM, FM signals from the DDS

112.

Maxwell discloses a control unit for selectively controlling at least one of said multi-signal generator center frequency and relative frequency spacing, see in col. 7, line 27-53, for the frequency controller 44, the terminal 54 is programmed to control the preselected desirable different frequencies. In Fig. 4, the DDS 112' receives the controlling signal 120 from the control block 118.

Maxwell **claim 2**, wherein said ...a wave memory for reproducing a selected waveform output signal providing said plurality of signals, see in Fig. 4, Read Only Memory 204, the address input, the receiving control from 120 for producing different waveforms at 114, 154, plurality of frequencies from DDS 112, for the determined selected plurality of frequency sets.

Maxwell discloses **claim 3**, refer to the plurality of frequencies of the set for AM band 154, and the plurality of frequencies of the set for FM band 114, col. 8, line 51-57, col. 10, line 17-19, and Fig. 3.

Maxwell discloses **claim 4**, wherein control unit provides prestored waveforms selectively transferred to said wave memory to provide said plurality of signals on a corresponding portion of said selected band, see in Fig. 3, the control block 118, signal 120, signal 140. In Fig. 2, col. 7, line 27, col. 7, line 39-46, the frequency control 44, for providing the transferred data for selected different frequency.

Maxwell discloses **claim 5**, the waveform converter to reproduced selected converted output signal, see in Fig 4, the digital to analog converter D/A 213 for reproduce the data incoming from latch 209, ROM 204.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell in view of Argo et al. (US 4,764,978).

Maxwell disclosed in col. 7, line 61 to col. 8, line 9, the audio block 102, could be tape compact disk player, microphone, computer or any other audio means, but not the selectively connected.

Argo et al. discloses **claim 6**, the audio source 22 having a switch for the tape 22 for the audio memory, the microphone 32 being selective connected to the AM modulator 260, the converter such as the varactor diode FM modulator 390.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Argo et al.'s switched audio source 22 having audio tape and microphone, to Maxwellified above, such that the audio source could be switched.

Regarding **claims 7, 8, 9**, referring to the discussion in claim 1, which also provides the claimed features for the programmable generator DDS 112, the mixer 108, AM modulator 150, the preselected frequencies of various radio bands, AM, FM, emergency frequencies,

police band, fire fighter frequencies, in abstract. In Fig. 6, the step 304 for the means for determining of what frequencies are used in a particular location, for the selectively varied plurality of the different portions of the selected band. Maxwell discloses the utilization of the control 118, frequency control 44, for the controlling of the programmable signal generator, DDS 112. Maxwell utilizes the AM modulator 150, the mixer 108, for the connection to the DDS 112 of the programmable signal generator.

Regarding **claims 10, 11**, referring to the discussion in claims 1, 6, which also provides the claimed features for the audio memory, the microphone, selectively connected to said frequency modulator.

3. Claims 12-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell in view of Wilson (US 5,602,868).

Maxwell does not explicitly indicate the power amplifier selectively receiving the mixer output.

Wilson teaches **claim 12**, a power amplifier selectively receiving from one of said mixer output signal and said converted signal, and providing a transmitter output signal, see in abstract, front figure, Fig. 1, for a multiple-modulation communication system, having the element 200, for the FM, AM, including 201-207, 211-217, AM/FM selecting switch 209, the mixer 219. In col. 5, line 16-21, the mixer 219 sends signal to the power amplifier 105, 111.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Wilson's selecting AM or FM for the power amplifier, to Maxwell, such that power amplifier could select the signal for each band.

Regarding **claim 13**, Maxwell has shown above, the first signal and the second signal generator having DDS outputs 114, for FM band spaced-frequencies, the AM band spaced frequencies, the control 118 means, the mixer, the power amplifier 132, 162.

Regarding **claim 14**, referring to the discussion in claim 6, which also provides the claimed features for the audio memory, the microphone.

Regarding **claim 15**, referring to the discussion in claim 1, which also provides the claimed features for the selecting of the frequencies, and the determining means for the selection from various different frequency sets, from Maxwell, for the substantially selected portion.

Regarding **claim 16**, referring to the discussion in claims 1, which also provides the claimed features for the first, second signal generator, the mixer.

4. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell in view of Morris (US 5, 162, 763).

Maxwell as modified above does not explicitly indicate the details for the sum of the sine wave, although Maxwell discloses the selecting a set of carrier frequencies.

Morris teaches **claim 17**, providing a corresponding sum of sine wave signals each

Art Unit: 2684

corresponding to one of the set of carrier frequency, dividing the sum..calculating a variance..changing the phase..repeating..transmitting..sum of said sine wave signals , see in abstract, Fig. 4, col. 9, line 54-58, the modulator 52, 60, the sum 56 for summing 68, for the AM message, AM LO, the FM message, the output 24 AM over FM.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Morris's amplitude balancing by adjusting the relative phase, to Maxwell, such that the modulated signal could control and balance the amplitude of the summed signal.

Regarding **claim 18**, referring to the discussion in claim 17 above, which also provides the claimed features for the randomly changing the phase relationship of the sine wave signals.

Regarding **claim 19**, referring to the discussion in claim 1, which also provides the claimed features for the selecting of a set of frequencies.

Regarding **claim 20**, referring to the discussion in claim 1, which also provides the claimed features for the AM, FM.

5. Claims 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maxwell in view of Argo et al., and further in view of Hunsinger et al. (US 5,465,396).

Hunsinger et al. teaches **claim 21**, modulating said signal corresponding to the sum of said sine wave signals, see in front figure, abstract, col. 9, line 54-58, for simultaneously transmission of the AM over the FM to the broadcast band, utilizing the sum 22 for generating the composite signal, AM over FM for transmission.



Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify and add Hunsinger et al.'s means for summing and generating the composite signal AM over FM, to Maxwell, such that AM signal could share the the common frequency translation element, and the power amplifier with the FM signal.

Regarding **claim 22**, referring to the discussion in claim 22 above for the translation the sum of the AM over FM to the broadcast band, in the abstract.

### *Conclusion*

6. In the above discussion, Maxwell discloses the emergency vehicle radio transmission system, having the determining means for selecting from various frequency bands, including the AM, FM bands, utilizing the signal DDS 112 for generating the plurality of the spaced frequencies in a band, for the AM and FM modulator, with the control block 118, the remote terminal for sending frequency data information. Argo et al. discloses the 's switched audio source 22 having audio tape and microphone. Morris discloses the amplitude balancing by adjusting the relative phase. Wilson discloses the selecting AM or FM for the power amplifier. Hunsinger et al. discloses the modulator 16, 22 for combining the sum of the AM and modulated FM signals, for the AM over the FM, Fig. 4, and the translation of the sum to the broadcast band.
7. The cited pertinent prior arts are listed below:
  - A. US 6,188,891, Feb. 2001, Fujike et al. discloses in Fig. 7, the modulation section 65, control section 54, the PLL circuit 53.
  - B. US 5,889,475, Klosinski et al. discloses the emergency vehicle for transmitting broad band of AM and FM together.
  - C. US 4,44,790, Bishop discloses the broadcast band siren alarm transmitter system for vehicle.

Art Unit: 2684

D. US 3,624,507, November 1971, Fukata discloses the transmitter means of the wobbling sawtooth wave generator having two oscillators for the selective amplifier, front figure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles Chow whose telephone number is (703)-306-5615.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Hunter, can be reached at (703)-308-6732.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to: (703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Charles Chow

November/20/2001.



THANH CONG LE  
PRIMARY EXAMINER